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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/053,365

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EXAMINER

HOFFMANN, JOHN M

ART UNIT

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1791

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/053,365	<b>Applicant(s)</b> DAWES ET AL.	
	<b>Examiner</b> John Hoffmann	<b>Art Unit</b> 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 July 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3,7-14,17-21,23,29,30,32-45,51-53,56,139 and 140 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,7-14,17-21,23,29,30,32-45,51-53,56,139 and 140 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-3, 7-14, 17-21, 23, 29-30, 32-44, 44, 45, 51-53, 56, and 139-140 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 1: there is no support for the steps of providing and contacting. Since the providing step provides the gas to the preform, the gas is already in contact with the preform. There is no support for an additional step of contacting. Claims 2, 30 and 51 lack support for substantially the same reason.

Claim 139 refers to having the glass doped with the gas. Literally it would mean, for example, the molecule CF<sub>4</sub> resides in the glass. There is no support for this.

The above is not intended to be an exhaustive list; the above problems occur in more than one claim. The burden remains with applicant to review the claims to make sure they comply with all applicable statutes.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-3, 7-14, 17-21, 23, 29-30, 32-44, 44, 45, 51-53 56, and 139-140 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 requires providing an atmosphere to a soot preform, and another step of contacting the preform with the atmosphere. It is unclear if these two steps are the same thing, or if they are separate steps. The same applies to the refilling and the second contacting step - it is unclear if they are suppose to be the same step, different steps, or if they can be either.

To look at it another way, it is a potential competitor would not be able to reasonably ascertain whether they could avoid infringement by having a substantially identical process but have only a providing or contacting step, but not both. Claims 2, 30 and 51 are indefinite for substantially the same reason.

This is particularly confusing when it comes to claim 7 - which makes it unclear if the inert gas could be part of the refilling step.

There is no antecedent basis for "the step" (and variations of the/said step/steps) throughout the claims. First, there is no literal antecedent for any "step". Second, the implicit support is confusing. For example, see claim 1, line 30 refers to "the step of contacting the soot preform. Whereas line 7 of claim 1 refers to contacting, there is no

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mention of it being a step. This causes confusion at least at line 8 which refers to "maintaining". One cannot reasonably tell whether this is a substep of an implied step of contacting – or if it is a totally new step. Compare also to the end of claim 39 which indicates that the maintaining is part of "the step of sealing...and maintaining"; it is unclear why the maintaining is part of the sealing step of claim 39, but not part of the contacting step of claim 1.

IT is unclear what is meant by "at least partially refilling the vessel". It is unclear if this means that the vessel must be filled in one of the other steps, and if so, which one. Clearly something cannot be refilled, if it was never filled previously. Examiner is uncertain how one could provide the gas to the vessel, but prevent it from flowing throughout the vessel. Nevertheless, since the claim indicates that the refilling can be "partial", such implies that part of the vessel can not have the gas in it. Perhaps it means that there is a compartment of the vessel which need not have any of the gas in it.

Claim 139 at line 8 requires "maintaining the soot preform in contact with the first gaseous atmosphere" - however line 4 indicates it is the gas that is in contact with the preform. Thus it is unclear if the gas and the gaseous atmosphere are suppose to be the same thing. Furthermore it is unclear what is meant by the "in contact" of line 4: it appears to be a grammatical problem; it is unclear if it is already "in contact" during the adding step (i.e. they are added at the same time), or if it means that the gas is added so that it is brought "into contact" with the preform.

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Line 10 of claim 139 refers "partially doped" - it is unclear what is meant by this, since any amount of dopant means it is doped. But more importantly, line 12 indicates it is "is doped" - It is unclear whether this only limits those situations where it is doped, and not those where it is only partially doped.

Claim 139 also requires that the preform is doped with the first gas; it is unclear if it should be interpreted as being doped by the gas, or if it actually means the dopant molecule stays as the molecule in the preform. At least claim 140 is indefinite for the same reasons claim 139 is.

Claim 10: there is confusing antecedent basis for "reductions" - it is unclear if this is addition to the decrease of claim 1. It is unclear if there must be reductions in addition the decrease. There is confusing antecedent basis for "dopant gas" - claim 1 already sets forth that the gas is doped into the glass, it is unclear if claim has double inclusion of the same step.

Claim 23 sets forth that there is heating occurring during the reaction times. However, claim 23 depends from claim 1 which indicates that the maintaining of the temperature is "for a first reacting time". It is not understood how the temperature could be maintained at the same time it is being raised.

There is confusing antecedent basis for "pressurization" in claim 39. It unclear if it is limited to the pressurizing of claim 30.

The above is not intended to be an exhaustive list; the above problems occur in more than one claim. The burden remains with applicant to review the claims to make sure they comply with all applicable statutes.

***Claim Rejections - 35 USC § 103***

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-3, 7-14, 17-21, 23, 29-30, 32-44, 44, 45, 51-53, 56, and 139-140 rejected under 35 U.S.C. 103(a) as being unpatentable over Kyoto 5158587 alone, or in view of Walker 4178347, Dobbins 5043002, Biswas 4575463 Simms 4339256 and Korenowski 4118295.

Example 2 of Kyoto discloses the providing step and all of the contacting step, except for the flow rate limitation and the decreasing partial pressure. Kyoto's example 2 also does not disclose the evacuating, refilling and additional contacting step. However, based on col. 2, line 63, and example 1, Kyoto also teaches doping without any gas flowing out. Alternatively: it would have been obvious to have no gas flowing out, because if any gas flows out, the pressure is not being maintained.

Moreover, in light of col. 3, lines 14-24 of Walker, the gas is corrosive and noxious – which provides motivation to use the not-preferred method – i.e. to create less corrosive and noxious gas. See also Dobbins col. 1, line 37 to col. 2, line 44 which discloses that use of halides can be very expensive in terms of pollution abatement and equipment losses.



It is noted that it is inherent that the partial pressure would decrease - clearly, since the fluorine is doped into the glass, the amount of fluorine in the gas would be reduced, which would cause the partial pressure to decrease. See also instant claim 10 which indicates reactants are consumed.

As to the evacuating and refilling, it would have been obvious to purge the gas, and refill it so to provide more fluorine. It is generally not invention to replenish a spent source. See for example Biswas (col. 4, lines 11-15).

It is noted that a continuous process is obvious in view of a batch process:

**From MPEP 2144.04**

**E. Making Continuous**

In re Dilnot, 319 F.2d 188, 138 USPQ 248 (CCPA 1963) (Claim directed to a method of producing a cementitious structure wherein a stable air foam is introduced into a slurry of cementitious material differed from the prior art only in requiring the addition of the foam to be continuous. The court held the claimed continuous operation would have been obvious in light of the batch process of the prior art.).

Thus it would also be obvious to use a batch process, semi-batch, or semi-continuous process in light of a continuous process. In other words, In light of Kyoto's teaching to fill the vessel once, or continuously supply and evacuate the reactant, it is not invention to supply the necessary fluorine compound in two batches.

**From MPEP 2144.04**

**C. Changes in Sequence of Adding Ingredients**

Ex parte Rubin , 128 USPQ 440 (Bd. App. 1959) (Prior art reference disclosing a process of making a laminated sheet wherein a base sheet is first coated with a metallic film and thereafter impregnated with a thermosetting material was held to render prima facie obvious claims directed to a process of making a laminated sheet by reversing the

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order of the prior art process steps.). See also *In re Burhans*, 154 F.2d 690, 69 USPQ 330 (CCPA 1946) (selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results); *In re Gibson*, 39 F.2d 975, 5 USPQ 230 (CCPA 1930) (Selection of any order of mixing ingredients is prima facie obvious.).

As indicated by the Supreme Court in *KSR vs. Teleflex*:

When there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense. In that instance the fact that a combination was obvious to try might show that it was obvious under §103.

Dividing the amount of necessary fluorine into two separate steps would have been prima facie Obvious. It does not appear to be any more innovative than providing dual rinse cycles, or dual wash cycles in a dishwasher or clothes washer.

Simms is cited as evidence that batch semicontinuous and continuous processes are known in the glass making art (col. 5, lines 8-13). Korenowski is cited to show that it is known that semi-continuous processes are sometimes the most economical (col. 3, lines 23-27). Thus in addition to the above: it would have been obvious to try to add the dopant gas in a semi continuous manner – or otherwise provide the dopant in two phases, rather than in one step, or in a continuous manner, to find the most effective way of minimizing the noxious/corrosive gas.

Claim 2: it would have been obvious to purge/fill the vessel as many times as necessary to get the required amount of dopant into the glass.

Claim 3 would have been obvious so as to remove the spent gas - to make room for fresh dopant gas.

Claims 7 and 9: it would have been obvious to purge the first gas to purge the first spent gas.

Claims 8 and 10: Diatomic fluorine is added/created. See equation 2 of col. 3 of Kyoto. As to claim 10's "to compensate...." This is an intention that fails to define any manipulative steps. A claim does not define over the prior art just because someone has an intention/purpose "to compensate". In particular - since the claim does not require any actual reaction of the dopant gas. Furthermore, based on claim 23 reciting that the heating occurs during the reacting time, the "for a first reacting time" maintaining limitation of claim 1 needs to be interpreted as "for the purpose" – not to signify that they begin at the same time (see the 112 rejection regarding claim 23).

Claims 11 and 12: Examiner take Official Notice that these are conventional means to contain heated and pressurized reactions, so as to prevent bursting of the reaction vessel and release of gases. It would have been obvious to use double or – tripled walled vessels so as to prevent accidental death if the vessel should rupture.

Claim 13: Kyoto teaches this.

Claim 14: as per the secondary references the halide gas reacts with water to form HF – which is detrimental to the environment and equipment. IT would have been obvious to remove all water (i.e. dry) from everything the gas contacts, prior to contact.

Claim 17 is inherently met because the pressures change.

Claim 18: as per equation 2 of Kyoto - every mole of the reactant would result in two moles of gaseous species.

Claims 19-21 and 23: it would have been obvious to perform routine experimentation to determine the optimal diffusing times and temperatures, depending upon the size and porosity of the preform.

Claim 29: examiner takes Official Notice that it is conventional to dilute dangerous gases with inert gases so as to reduce their noxious characteristics, should they accidentally escape. It would have been obvious to use inert gas with the Kyoto halide, so as to reduce the danger to the artisan, should a leak develop.

The rest of the claims not specifically mentioned above would have been an obvious matter of routine experimentation to determine the optimal pressure, temperature or other well known result effective variables. As to those claims requiring the use of a makeup gas. Note col. 3, lines 43-45 of Kyoto which teaches adding reactant to maintain optimum reaction rate. It would have been obvious to have a sensor to detect the concentration of the reactant or a by product so as to determine when more reactant should be added so as to maintain the optimal rate.

### ***Response to Arguments***

Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

It is argued that both claims 30 and 39 refer to pressurized gas within a vessel, and thus there is nothing confusing about claim 39. Examiner disagrees. The confusion is if they are the same pressurizing, or different pressurizings.

Applicant points out that 37 CFR 1.111 requires arguments regarding applied references and since no references were applied, no additional arguments were needed. This is not very relevant, 37 CFR 1.111 **ALSO** states: In amending in reply to a rejection of claims in an application or patent under reexamination, the applicant or patent owner must clearly point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections made.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Hoffmann whose telephone number is (571) 272 1191. The examiner can normally be reached on Monday through Friday, 7:00- 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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